AndroColl™ Equine

FOR SINGLE LAYER CENTRIFUGATION

Semen stored for 48 - 96 hours after being processed through AndroColl has resulted in pregnancy rates of 76%

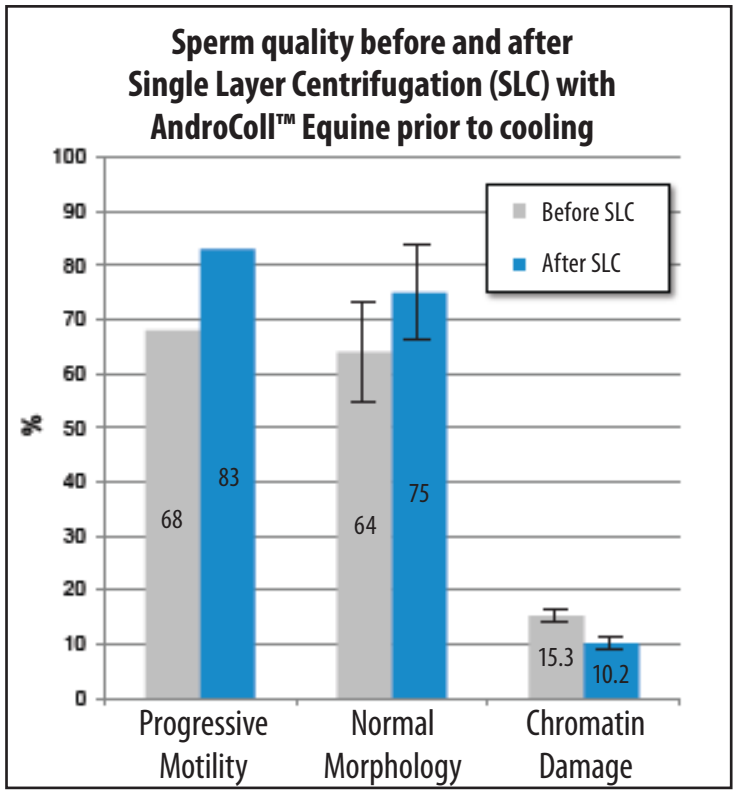
Ideal for sub-fertile stallions with a high percentage of non-viable sperm cells

Improve the quality of cooled and frozen stallion semen

Reduce semen processing time in comparison to other gradient centrifugation media

Single Layer Centrifugation with AndroColl is easy & cost effective

DISCOVER THE ANDROCOLL™ EFFECT



Improve Ejaculate Quality & Fertility

AndroColl improves ejaculate quality and fertility by separating dead, immotile, immature, chromatin damaged and morphologically abnormal sperm cells from the viable sperm cell population. Epithelial cells, seminal plasma's potentially damaging factors and 99.9% of pathogens are removed as well.

Contact Minitube for a list of publications related to AndroColl™ Equine

AndroColl™ Equine

■ **REF 13580/0005** 250 ml

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AndroColl™ Equine Accessories

IEC Centra CL2

- **REF 14607/3000**

General Purpose Benchtop Centrifuge

Aerocarrier Rotor

- **REF 14607/3002**

Includes (4) 50ml adapters and (4) 15ml adapters

50ml Centrifuge Tubes

- **REF 17220/0017** Free-standing (red top)
- **REF 14607/0053** Conical tip (blue top)

Aspiration

- **REF 19884/0600** Vaccum Pump (Craft)
- **REF 12438/7851** 10ml Pipette Pump
- **REF 12070/7319** Pasteur Pipettes

Sperm Counting

- **REF**

12068/3141 Hemacytometer
12068/8145 Cover glass for Hemacytometer
12006/0017 Zeiss Primo Star Microscope
12520/6000 Sperm Vision® Therio CASA System

EquiPRO® ApX² Extender

■ REF	100ml
13570/0300 No Antibiotics	9.2g
13570/0310 Gentamicin	9.2g
13570/0320 Amikacin/Penicillin	9.2g
13570/0330 Ticarcillin	9.2g

For re-suspension of sperm pellet, cannot be used for centrifugation process. Contains fertility enhancing proteins and antioxidants for fresh/cooled semen. Includes 100ml sterile distilled water.

EquiPRO® Extender

■ REF	100ml
13570/0200 No Antibiotics	9.2g
13570/0210 Gentamicin	9.2g
13570/0220 Amikacin/Penicillin	9.3g
13570/0230 Ticarcillin	9.3g

For dilution prior to centrifugation. A blend of glucose, sucrose and non-fat dry milk with a choice of antibiotic. Includes 100ml sterile distilled water.

EquiPRO® CryoGuard™ Extender

For semen cryopreservation. Must be stored frozen until use.

Complete - with egg yolk
Convenient and ready to use

- **REF 13570/3325** No Antibiotics, 23ml
- **REF 13570/3324** Ticarcillin, 23ml

Concentrated - add egg yolk
For freezing larger semen volumes

- **REF 13570/2107** No Antibiotics, 240ml
- **REF 13570/2106** Ticarcillin, 240ml

Ghent Extender

- **REF 13571/0023** Glycerol & Gentamicin, 23ml

Ready to use egg yolk-based extender for freezing semen. Must be stored frozen until use.

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AndroColl™ Equine

species-specific colloid for single layer centrifugation of stallion spermatozoa

REF 13580/0005

Net Contents: 250 ml

Storage: AndroColl™ Equine is a sterile opaque solution and can be stored at ambient temperature in the unopened bottle. Please check the expiration date printed on each bottle. After opening, it should be stored in the refrigerator at +5°C and used within 4 weeks. Handle using aseptic techniques.

Shelf Life: Date of expiration is printed on each bottle AndroColl™ Equine

Instructions For Use

Necessary Equipment

- Centrifuge with swing-out rotor for 50 ml centrifugation tubes
- 50 ml tubes for the centrifuge
- Extender for pre-dilution & re-suspension
- Pipettes or aspiration pump for removal of supernatant

Application

Extend the gel-free, filtered raw ejaculate with an EquiPro™ extender to a sperm concentration of approximately 100 x 10^6. Please refer to the extender's specific instructions for preparation.

Pour 15 ml of AndroColl™ Equine into a 50 ml centrifugation tube. Carefully pipette extended semen in layers of 1.5 ml on top of the colloid until a total volume of 15 ml with a maximum of 1.5 x 10^9 cells is reached. Avoid mixing semen with the colloid.

Centrifuge at 300 g for a maximum of 20 minutes.

Note: Use the following equations to compute RCF (g force) or RPM.

$RCF = 1.118 \times r \times (RPM/1000)^2$

$$RPM = \sqrt{\frac{RCF}{(1.118 \times 10^{-6}) \times r}}$$

r = radius in mm measured from center of centrifuge spindle to bottom of sample tube when in rotor.

Aspirate the supernatant (seminal plasma mixed with extender, and most of the colloid) with an aspiration pump or pipette. Remove the sperm pellet from beneath the remaining colloid using a clean pipette and transfer into a clean conical tube.

Further processing is performed as usual for fresh, cooled or frozen semen.

Extended semen is carefully pipetted on top of the AndroColl™ Equine.

15 ml AndroColl™ at the bottom and 1.5ml of extended semen layered on top.

Prepared sample prior to centrifugation; 15ml AndroColl™ and 15 ml extended semen.

Consulting and Training

Minitube's scientific and technical staff are available to answer any questions. Minitube also offers seminars and training opportunities. Please contact Minitube for further information or refer to the website.

WARNING: KEEP THE PRODUCT OUT OF THE REACH OF CHILDREN. THIS PRODUCT IS NOT SUITABLE FOR HUMAN OR ANIMAL CONSUMPTION OR FOR DRUG OR CLINICAL USE. NOT FOR INJECTION.

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AndroColl™ Literature

Processing stored stallion semen doses by Single Layer Centrifugation
J.M. Morrell, B. Macias Garcia, F.J. Pena, A. Johannisson
Theriogenology, Volume 76, Issue 8, November 2011, Pages 1424-1432 **View Abstract**

Comparison of density gradient and single layer centrifugation of stallion spermatozoa: yield, motility and survival.
Morrell, J.M., Dalin, A-M., & Rodriguez-Martinez, H. (2009) Equine Veterinary Journal 41, 53-58. **View Abstract**

Centrifugation on a single layer of colloid selects improved quality spermatozoa from frozen-thawed stallion semen.
Macias GB, Morrell J.M, Ortega Ferrusola C., Fernandez-Gonzalez L., Tapia JA, Rodriguez-Martinez H, Pena FJ.
Anim Reprod Sci. 2009 Aug;114(1-3):193-202. Epub 2008 Aug 29. **View Abstract**

Single layer centrifugation through colloid positively modifies the sperm sub-population structure of frozen-thawed stallion spermatozoa.
Macias GB, Fernandez-Gonzalez L., Morrell J., Ortega Ferrusola C., Tapia JA, Rodriguez-Martinez H, Pena FJ.
Reprod Domest Anim. 2009 Jun;44(3):523-6. Epub 2008 Oct 16.. **View Abstract**

Colloidal centrifugation with Androcoll-E™ prolongs stallion sperm motility, viability and chromatin integrity.
Johannisson, A., Morrell, J.M., Thorén, J, Jonsson, M, Dalin, A-M, Rodriguez-Martinez, H.
(2009) Anim Reprod Sci. 116, 119-128. **View Abstract**

Stallion sperm viability, as measured by the Nucleocounter SP-100, is affected by extender and enhanced by Single Layer Centrifugation.
Morrell, J.M., Johannisson, A., Juntilla L, Rytty K, Bäckgren L, Dalin, A-M, Rodriguez-Martinez, H.
Veterinary Medicine International doi:10.4061/2010/659862 **View Abstract**

Single Layer Centrifugation of stallion spermatozoa consistently selects the most robust spermatozoa from the rest of the ejaculate in a large sample size: data from 3 breeding seasons.
Morrell JM, Rodriguez-Martinez H, Johannisson A. (2010)
Equine Veterinary Journal doi:10.1111/j.2042.3306.2010.00101 **View Abstract**

Single Layer Centrifugation of stallion spermatozoa improves sperm quality compared to sperm washing.
Morrell JM, Rodriguez-Martinez H, Johannisson A.(2010)
Reproductive Biomedicine Online doi:10.1016/j.rbmo.2010.03.027 **View Abstract**

Single Layer Centrifugation Benefits in Horse Breeding.
Natalie DeFee Mendik, MA
The Horse, April 20 2012, Article # 19911 **View**

Single Layer Centrifugation of cooled stallion semen with Androcoll-E improves sperm quality
JM Morrell 1,B Macias Garcia2, FJ Pena2, S Meurling3, A Johannisson4
1 Clinical Sciences, Div. Reproduction, SLU, Uppsala, Sweden, 2 University of Extremadura, Cáceres, Spain; 3 Flyinge, 3 Anatomy, Physiology and Biochemistry, SLU, Sweden.

Single Layer Centrifugation of fresh stallion semen with Androcoll-E improves sperm quality
JM Morrell 1 S. Meurling2 , A Johannisson 3
1 Dept. Clinical Sciences, Div. Reproduction, SLU, Uppsala, 2 Flyinge, 3 Dept Anatomy, Physiology and Biochemistry, SLU, Sweden.

Single Layer Centrifugation with Androcoll-E can improve sperm survival during freezing.
M. Hoogewijs1 and JM Morrell 2
1 University of Ghent, Belgium; 2 Dept. Clinical Sciences, Div. Reproduction, SLU, Uppsala, Sweden.

Pregnancies after AI with SLC-selected spermatozoa stored for 48h, 72h or 96h
JM Morrell 1,B Macias Garcia2, FJ Pena2, S Meurling3, A Johannisson4
1 Clinical Sciences, Div. Reproduction, SLU, Uppsala, Sweden, 2 University of Extremadura, Cáceres, Spain; 3 Flyinge, 3 Anatomy, Physiology and Biochemistry, SLU, Sweden.

Comparison of density gradient and single layer centrifugation of stallion spermatozoa: yield, motility and survival.
Morrell, J.M., Dalin, A-M., & Rodriguez-Martinez, H. (2009)
Equine Veterinary Journal 41, 53-58.

Colloidal centrifugation of stallion semen: changes in sperm motility, velocity and chromatin integrity during storage.
Morrell, J.M., Johannisson, A., Strutz, H., Dalin, A-M. & Rodriguez-Martinez, H. (2009) Journal Equine Veterinary Science 29, 24-32.

Morphology and chromatin integrity of stallion spermatozoa prepared by density gradient and single layer centrifugation through silica colloids.
Morrell, J.M., Johannisson, A., Dalin, A-M, Rodriguez-Martinez, H. (2009)
Reproduction Domestic Animals 44, 512-517.

Biomimetic techniques for improving sperm quality in animal breeding: a review.
Morrell JM & Rodriguez-Martinez H. (2009)
The Open Andrology Journal 1, 1-9.

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Single Layer Centrifugation with Androcoll™-E can be scaled-up to allow large volumes of stallion ejaculate to be processed easily.
Morrell, J.M., Johannisson, A., Dalin, A-M, Rodriguez-Martinez, H. (2009)
Theriogenology 72, 879-884.

Sperm survival following colloid centrifugation varies according to the part of the sperm-rich fraction used.
Morrell, JM, Saravia, F, Wallgren M, van Wienen, M & Rodriguez-Martinez, H. (2009)
Society for Reproduction and Fertility 66, 85-86.

Single-layer centrifugation through colloid selects improved quality of epididymal cat sperm.
Chatdarong K, Thuwanut P, Morrell JM (2010)
Theriogenology. 2010 Feb 18. [Epub ahead of print] PMID: 20171724

Single layer centrifugation of stallion spermatozoa through Androcoll™-E does not adversely affect their capacitation-like status, as measured by CTC-staining.
Bergqvist A-S, Johannisson A, Bäckgren L, Dalin A-M, Rodriguez-Martinez H, Morrell JM. (2010)
Reprod Dom Anim doi: 10.1111/j.1439-0531.2010.01637

Single Layer Centrifugation of stallion spermatozoa improves sperm quality compared to sperm washing.
Morrell JM, Rodriguez-Martinez H, Johannisson A.(2010)
Reproductive Biomedicine Online doi:10.1016/j.rbmo.2010.03.027

Practical applications of sperm selection techniques as a tool for improving reproductive efficiency.
Morrell JM, Rodriguez-Martinez H. (2010)
Veterinary Medicine International doi:10.4061/2011/2984767

Additional research publications can be view by searching "AndroColl-E" at **http://www.ncbi.nlm.nih.gov/pubmed**